



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,827	02/15/2001	Colm J. Prendergast	AD-217J	5800

7590 07/28/2003
IANDIORIO & TESKA
260 BEAR HILL ROAD
WALTHAM, MA 02451-1018

EXAMINER

SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 07/28/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

27

Office Action Summary

Application No.

09/784,827

Applicant(s)

PRENDERGAST ET AL.

Examiner

Dr. Ramnandan Singh

Art Unit

2644

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. In view of the finding of new art, the final Office action mailed on 09 April 2003 is withdrawn, and the prosecution is reopened, as new grounds of rejections are made. Further, Applicant's arguments filed on 21 January 2003 are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 13-16 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ehlig et al [Us 5,550,993].

Regarding claim 1, Ehlig et al teaches analog communication across an isolation barrier in the form of a data access arrangement (DAA) 787, wherein this DAA may comprise a single isolation element or a mixture of multiple isolating elements in parallel such as capacitors, transformers, and optical isolators. The analog

Art Unit: 2644

communication system comprises an analog to digital converter 539 having an analog output $S(t)$ connected the DAA; an analog to digital (A/D) converter 785 having an input coupled to the analog output of the DAA for providing a digital output [Figs. 10-12, 18; col. 31, lines 14-56; col. 34, lines 15-34].

Regarding claims 2-7, Ehlig et al teaches an encoder 527, and a digital modulator 533 connected the D/A 539 [Fig. 10]. He also teaches sending digital output from the A/D converter to a demodulator and a decoder 551 [Figs. 12, 18].

Regarding claims 13-16, Ehlig et al teaches data and control information [Fig. 16] supplied by two-way communication paths DSP 653 and a second device 11 [col. 32, lines 66-67; col. 33, lines 1-16].

Regarding claims 21-23, Ehlig et al teaches analog communication with a bi-directional isolation system 787 [Fig. 18].

Regarding claim 24, Ehlig et al teaches an echo canceller 515 to improve the transmission of a communication circuit [Fig. 9; col. 27, lines 54-62; col. 31, lines 7-13].

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 10, 12 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlig et al [US 5,550,993] as applied to claims 1-7 above , and further, in view of Yurgelites [US 5,500,895].

Regarding claim 10, Ehlig et al teaches a generic DAA; it does not disclose expressly an isolation element, such as capacitor of the DAA.

Yurgelites discloses analog communications using a DAA 22 having a capacitive isolation barrier using capacitors as shown in Fig. 2 [Figs. 1-3; col. 1, line 59 to col. 2, line 24; col. 3, lines 12-67].

Ehlig et al and Yurgelites are analogous art because they are from a similar problem solving area, viz. , telephonic communications across a DAA.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the isolation element of the DAA of Yurgelites with Ehlig et al.

The suggestion/motivation for doing so would have been to provide an explicit description of the DAA for its operational use with the Ehlig et al system.

Regarding claim 12, Yurgelites teaches the analog communication technique that significantly reduces common mode noise [col. 4, lines 47-58].

Regarding claims 17-20, Ehlig et al teaches an encoder 527, and a digital modulator 533 connected the D/A 539 [Fig. 10]. He also teaches sending digital output from the A/D converter to a demodulator and a decoder 551 [Figs. 12, 18]. Further, a constant average voltage denotes an inherent feature of an analog communication system across an isolation barrier.

6. Claims 8-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlig et al [US 5,550,993] as applied to claims 1-7 above, and further, in view of either Scott et al [US 6,587,560 B1] or Rahamim et al [US 6,081,586].

Regarding claims 8-9 and 11, Ehlig et al teaches a generic DAA; it does not disclose expressly an isolation element, such as capacitor or a transformer of the DAA and a termination resistance. However, these elements for a DAA are well known in the art of both analog and digital communications across an isolation barrier.

Scott et al discloses analog communications across a DAA having isolation barriers with capacitors and transformers [col. 2, line 15 to col. 3, line 8].

Art Unit: 2644

Ehlig et al and Scott et al are analogous art because they are from a similar problem solving area, viz. , telephonic communications across a DAA.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the isolation element of the DAA of Scott et al with Ehlig et al.

The suggestion/motivation for doing so would have been to provide an explicit description of the DAA for its operational use with the Ehlig et al system.

Regarding claims 8-9 and 11, the combination of Ehlig et al and Rahamim et al discloses a DAA having isolation barriers with capacitors and transformers [Rahamim et al; Figs. 3B-3E]; and teaches terminating resistances 412, 413 and 430, 426 across the isolation barrier [Rahamim et al; Fig. 5].

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlig et al as applied to claims 1-7 above, and further in view of Chea, Jr. [US 4,387,273].

Regarding claim 12, the combination of Ehlig et al does not teach expressly a common mode interference signal sensing circuit and a summing circuit to remove the common mode interference signal.

Art Unit: 2644

Chea, Jr. teaches a common mode interference signal sensing circuit and a summing circuit to remove the common mode interference signal [col. 2, lines 64-67; col. 3, lines 1-3; col. 6, lines 36-54; col. 1, lines 55-67].

Ehlig et al and Chea, Jr. are analogous art because they are from a similar problem solving area, viz. , telephonic communications.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the common mode rejection technique of Chea with the combined system Ehlig et al.

The suggestion/motivation for doing so would have been to reduce the power dissipation in the interface circuitry of the isolation barrier [Chea, Jr. ; col. 1, lines 7-12].

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (i) Hershberger [US 5,602,912] show an analog front-end, and (ii) Hershberger [US 5,550,894] teaches a telephone line interface.

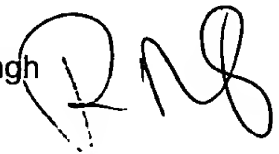
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

Art Unit: 2644

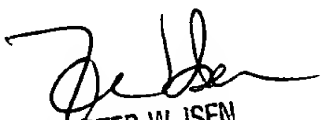
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-0377.

Dr. Ramnandan Singh
Examiner
Art Unit 2644



July 12, 2003



FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2630